Attachment 1 – Statement of Work
INL BOGOTA AVIATION UNIT'S TUMACO BILLETING STRUCTURE METAL PROTECTIVE WALL PROJECT

1.0 Statement of Work

1.1 General

The offeror shall provide all labor, materials, equipment, machinery, and components to construct the requested structures. The offeror shall provide for review and approval the design, drawings, material properties for the structures to be provided and identify an ability to support the logistical and security requirements associated with project execution.

The offeror shall have the capability of providing metal barrier defense system structures designed to protect against ballistic penetration of direct fire and fragmentation projectiles. Defense metal barrier wall systems are to be fabricated utilizing a minimum 26 gauge galvanized steel which can be easily installed in an austere location. The defense metal barrier wall system shall be constructed/assembled using pre-fabricated barrier wall system modular structures that are easily and securely reassembled in order to ensure efficient on-site assembly while at the same time appropriately and safely distributing the weights of loaded material within the system. The modular wall system will be installed on a solid and stable base that prevents erosion, this base should be made of concrete. Once installed, the system shall offer immediate stability meeting all appropriate Colombian building and structural codes, shall be properly aligned and plumb throughout. The defense system shall include all required accessories, such as corners, connectors, anchors and protection elements. The defense system shall be easily disassembled should it be required at a future date for assembly and installation at another site.

1.2 Assembly Process

The offeror shall provide and assemble the defense system structures according to the following procedures:

1.2.1 A geotechnical survey and site drawings will be provided. The offeror is solely responsible for the design of the steel barrier wall defense structures and for a confirmation Geotechnical study that shall include the investigation of the subsoil, the analysis and Engineering recommendations needed for the design and construction of the works in contact with the ground, as to ensure an appropriate behavior of building, as well as the existing utilities, the land and the neighboring constructions. It shall include all the field tests required to quantify the mechanic and hydraulic characteristics of the subsoil. The offeror shall submit for review by the INL Technical Review Panel a detailed report, which is to include but is not limited to the technical requirements, material requirements, design and drawings of the defense system structures, the recommended approach for the project and a detailed timeline, GANTT chart and critical path.

1.2.2 Transportation of Materials. The offeror is responsible for coordinating the transportation of all required material for assembly of the defense system structure. If fill material must be delivered to the project site, then the offeror is responsible for this effort. The offeror is responsible for ensuring that all project material is delivered in an appropriate and timely manner, taking the necessary precautions to avoid any damage to the material during on load, transport and off load, with full consideration and responsibility given for all transportation security requirements.

1.2.3 Assembly of Defense Metal Barrier Wall System Structures. The offeror is solely responsible for the mounting, installation, and assembly of the defense system in a safe, proper and timely manner.

1.2.4 Fill Material. The offeror will be provided a site-specific geotechnical survey, and shall ensure the site properties meet the required physical properties to support the structure offered. Should the offeror require any fill material from a different site to assemble defense system, the offeror shall take fill material soil samples and/or perform other appropriate soil studies to determine suitability of said material. The offeror is responsible for ensuring that the fill material used to fill any protective barrier / bastion associated with the structure meets all force protection requirements, and that the material does not include rocks or other inappropriate material that may cause injury or pose a safety risk should the bastion defense system come under attack. Shrapnel-producing material (3/4" and larger) must be screened and removed prior to filling the bastion. Beach sand taken from a "salt water" beach shall not be used. If delivery of fill material is necessary, the offeror shall include the location where appropriate fill material is to be obtained. The offeror is solely responsible for the acquisition of and quality of all fill material

1.2.5 Equipment and Machinery. For each project task, the offeror shall identify, procure or rent the appropriate equipment and machinery to be used, based on the project requirements.

1.3 Site preparation. For the entire scope of the project, the offeror shall identify additional tasks required to install a complete defense systems, including but not limited to, appropriate soil stabilization/fill, disassembly/removal of existing fencing (re-installation if required) and structures to include the existing protective bastion wall, leveling/grading, etc. If required any structure removed to facilitate site access (i.e fence, posts etc) shall be reinstalled and constructed to equal or better standard. If any surface or subsurface obstacle is encountered, it will be removed and properly disposed of or if required (i.e. fencing, utilities, aqueduct, sewage line etc), will be properly relocated/rerouted to allow for the construction. All work must be performed in accordance with the latest Colombian National codes. Throughout this site preparation phase care must be taken to ensure all structures that are on the base protective and adjacent to or along the path of the protective barrier wall are not damaged.

1.4 Water and sewage services. When required, the offeror shall ensure proper relocation/rerouting of water, sewer, and electrical installations. These items will be detailed and individually priced. The offeror shall provide a civil-hydraulic certified engineer for completing the work with demonstrated, relevant experience for on-site supervision. All work shall be performed in accordance with the latest Colombian National codes.

1.5 Power services. When required the offeror shall indicate in its proposal how it plans to manage this task. The offeror shall provide a certified electrical engineer for the completion of electrical installation and/or relocation and equipment connections with demonstrated, relevant experience for on-site work. This task includes but shall not be limited to: external movable spotlights; reflectors; system planning and construction of or removal of electrical infrastructure (if required posts, cabling, substations, transformer, and generators, etc.), in accordance with the latest Colombian National codes.

2.0 Delivery Location and Time.

The offeror shall deliver all defense system material and components to the work site by the date and time specified.

The offeror shall be responsible for ensuring that its personnel and subcontractors follow any special instructions for material delivery, as may be specified. This applies to any outside sources or subcontractors that might be delivering materials to a project site on behalf of the contractor. The contractor is responsible for the security of the material and components.

3.0 Completion, inspection, and delivery

The offeror shall include a project management tool (Gantt chart and critical path, or equivalent) indicating preparation, delivery, installation, clean up/turn over, and related tasks.

4.0 Specifications.

4.1 General.

All defense systems provided/assembled by the offeror shall meet the following minimum specifications:

Shall be fireproof, meet most updated Colombian National Codes / International Building Code in a seismic area and shall provide adequate resistance against external environmental factors (e.g., humidity, sea salt, excessive wind, fungus, mold, ultra-violet radiation). Surfaces shall be resistant to corrosion throughout the warranty period.

The minimum 26 gauge galvanized steel metal barrier defense systems structure shall effectively mitigate damage from direct fire and indirect fire weapons attacks. The structure material, support structure / frames and base shall ensure a well aligned, straight stable structure once completely constructed/filled.

The minimum 26 gauge galvanized steel metal barrier defense system structure shall be made from material that is currently either U.S. Department of State, U.S. Department of Defense, U.S. Army Corps of Engineers, U.S. Nuclear Regulatory Commission or U.S. Embassy Bogota/Narcotics Affairs Section tested and approved.

All electrical installation shall comply with the following electrical standards: NTC 2050 last upgraded version included but not limited to chapters 1,2,3,4 and section 645,NEC 250 last version upgrade, NTC 3471/UL 67, EIA/TIA 607, EIA/TIA 568-569 last version upgraded, ANSI/IEEE C62.41-C62.45, NEPA 780, NTC 4552, IEEE-80, IEEE-77 and RETIE last version upgraded.

4.1 Camouflage/Paint.

The galvanized steel metal barrier material shall be able to withstand elements to include UV rays, salt air, moisture etc. possible covering by wild plants, without reducing or compromising the structural security and stability of the structures. The sides and surfaces of each installed component shall prevent any adverse affects from the root growing process of plants that may grow to cover the surfaces. Structures shall be properly prime coated and painted in accordance with the installation paint scheme with a mold / element resistant paint.

4.2 Maintenance.

Following installation, the installed defense system's design shall facilitate easy maintenance without the need to disassemble any of the components. The system must also allow for disassembly only from the friendly side. All damages - environmental, accidental or combat-related - shall be easily corrected using the same materials as were used in the original construction. During the warranty period any damage related to poor site preparation, design, quality of material or construction shall be repaired by the contractor**.** All damages shall be repaired in such a manner so that the repaired defense system has the same resistance and level of protection as before the damage occurred. The system must also allow for disassembly only from the friendly side.

4.3 Warranty.

The offeror shall provide a defense system that will remain stable with the required level of force protection for a minimum period of ten (10) years. During the ten-year period following installation, the constructed defense system shall be able to retain its quality and protective properties. The warranty will cover all of the components used to construct the bunkers -- to include labor-- against material defects for ten (10) years, the quality of the installation for three (3) years.

5. Supply and Required Components. The offeror shall provide all required components.

6. <u>Required Components</u>. The offeror shall provide the following defense system components:

<u>6.1 Supply and Install 130 LM of High Protective Steel Barrier Wall</u>. Consists of 130 LM of steel barrier wall approximately 2.4 meters high x minimum 1 meter wide constructed along the perimeter of the specified area (a pre-fabricated steel billeting structure, diagram and pictures to be shared during pre-solicitation conference). The protective barrier wall will be placed approximately one (1) meter from the structure's exterior wall to allow for split unit AC compressor air flow. In addition the aforementioned linear dimension of barrier wall includes two "two (2) Linear Meter" wall "burladeros/offset exit walls" at each exit (see diagram). The barrier wall will include 2" galvanized steel pipe fence post securely anchored in concrete, placed within the metal barrier wall prior to fill, for the construction of a two meter high galvanized chain link fence with barb wire. The chain link fence material shall be installed at the barrier wall fill line and properly secured by upper and lower tension wire (diagram and pictures will be shared during pre-solicitation conference). Detail will be addressed during the pre-solicitation conference. This task also comprises the following sub-activities:

- Supply and installation of galvanized steel posts with a diameter of 2" and min 5.0m long anchored in concrete, with the necessary lateral support to guarantee the fence stability.
- Supply and installation of reinforcement diagonals in galvanized rail pipe, with a diameter of 2" and 3.20m long.
- Supply and installation of 10 gauge PVC coated galvanized wire mesh fencing material, and/or re-utilization of existing galvanized wire mesh fencing material removed to allow for installation of the barrier wall. Offeror provided wire mesh shall meet the code/specification of 80g of galvanization /m2.
- Supply and installation of 14 gauge barbed wire.
- Supply and utilize welding equipment and labor.
- Supply and installation of #8 gauge galvanized tension wire in the lower and upper side of the mesh.
- All welded joints are to be protected by applying zinc-rich paint in accordance with ASTM Practice A780.

- Supply and installation of ground conductor consisting of No. 8 AWG solid copper wire, including exothermic weld.

6.2 Due to the security nature of this project offeror attendance at pre-solicitation conference at the site is mandatory.